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EXAMINER	
GODDARD, BRIAN D	

ART UNIT	PAPER NUMBER
2171	14

DATE MAILED: 03/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/661,674	SNYDER ET AL.	
	Examiner	Art Unit	
	Brian Goddard	2171	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 July 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 January 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This communication is responsive to Amendment B, filed 14 July 2003.

2. Claims 1-9 are pending in this application following the Amendment. Claims 1 and 2 are independent claims. In Amendment B, claim 10 was cancelled, and claims 1 and 2 were amended. This action is made Final.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-3, 8 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,453,235 to Endo et al.

Referring to claim 1, Endo discloses a system and method for aircraft navigation as claimed. See Figures 1, 4 & 11-12 and the corresponding portions of Endo's specification for this disclosure. In particular, Endo teaches "a method for displaying navigational data associated with an aircraft[1] on a display [3] having a display coordinate system [2-dimensional (X, Y) pixel space], said method comprising the steps of:

providing one or more databases ['map data base' on CD-ROM 4 (See column 8, lines 27-43)], each database including navigational data [map data] stored as

[1] The examiner interprets Endo's "vehicle" as a hovercraft (or any other low-flying vehicle such as a helicopter) because the intended use of Endo's navigation apparatus is for any vehicle navigating relative to a road/mapping system. Therefore, Endo's "vehicle" is an aircraft as claimed.

geospatially organized data structures that include data representative of latitude and longitude coordinates [See Fig. 2 & corresponding portion of specification];

retrieving data from one or more of said databases [See Reference Elements 12 & 13];

projecting and culling [12 & 13] the retrieved data to a current display range [See column 9, lines 41-55];

updating, in real-time [See Background of the Invention Section and Fig. 11], a projected display database [VRAM 14] that substantially maintains correct projections of the projected and culled data from latitude and longitude coordinates to Cartesian coordinates [X, Y pixel coordinates (See e.g. Column 12, lines 51-63)];

modifying [Image Synthesis (26) of 23-25 & 27] said display database in accordance with avionics data [position & heading] associated with said aircraft [See columns 10-12]; and

displaying [on Display Unit 3] said display database in accordance with said modifying step [See column 10, lines 22-40]."

Referring to claim 2, the system and method of Endo as discussed above with regard to claim 1 discloses the invention as claimed. Again, see Figures 1, 4 & 11-12 and the corresponding portions of Endo's specification for this disclosure. In particular, Endo teaches "a display system comprising:

a cursor control device (CCD) [Remote Controller 2] configured to accept input from a user;

a display computer [Navigation Controller 1] coupled [wireless] to said CCD and configured to process avionics data [GPS positioning data (position and heading)] and said input from said user, where said display computer is further coupled to a display [Display Unit 3] having a display coordinate system [See above] and at least one database [CD-ROM 4] including navigational data...[See above];

said display computer further configured to..." perform the method of claim 1 above, as claimed.

Referring to claim 3, the system and method of Endo as discussed above with regard to claim 1 discloses the invention as claimed. See Figure 4 and the corresponding portion of Endo's specification for this disclosure. Endo discloses the method of claim 1, as above, "further comprising the step of unifying [Image Synthesis 26] map [Map Picture from VRAM 14] and plan [Guide Route Drawing from 23] mode presentations into a virtual map" as claimed.

Referring to claim 8, the system and method of Endo as discussed above with regard to claim 2 discloses the invention as claimed. See Figure 3 and the corresponding portion of Endo's specification for this disclosure. Endo's CCD [Remote Controller] is a graphical user interface as claimed. See column 9, lines 14-29 for the details of this disclosure.

Referring to claim 9, the system and method of Endo as discussed above with regard to claim 2 discloses the invention as claimed. See Figures 13-16 and the corresponding portions of Endo's specification for this disclosure. Endo's display "is

configured to display flight plan transitions [turns] as curved paths [See Figures 14A, 14D, 16A & 16D] from one flight leg [road] to the next" as claimed.

4. Claims 1, 2 and 4 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,212,132 to Yamane et al.

Referring to claim 1, Yamane discloses a system and method for displaying navigational information associated with an aircraft as claimed. See Figures 1, 3 & 13 and the corresponding portions of Yamane's specification for this disclosure. In particular, Yamane teaches "a method for displaying navigational data associated with an aircraft[2] on a display [15] having a display coordinate system [2-dimensional (X, Y) pixel space], said method comprising the steps of:

providing one or more databases [Map Database 28], each database including navigational data stored as geospatially organized data structures that include data representative of latitude and longitude coordinates [See column 9, lines 46-51];

retrieving data from one or more of said databases [See Reference Elements 28, 30 & 34];

projecting and culling [Polygon Processing 30 (S1)] the retrieved data to a current display range;

updating, in real-time, a projected display database [Polygon Buffer 34] that substantially maintains correct projections of the projected and culled data from latitude

[2] The examiner interprets Yamane's "ship" as an aircraft because the intended use of Yamane's navigational display apparatus is for any vehicle using radar navigation. Therefore, Yamane's "ship" is an aircraft as claimed.

and longitude coordinates to Cartesian coordinates [X, Y pixel coordinates (See Step S1)];

modifying said display database [Geometric Conversion 40 (S2) and Rendering 42 (S3)] in accordance with avionics data [Parameters 38 and GPS Positioning 45] associated with said aircraft; and

displaying [on Display Unit 15] said display database in accordance with said modifying step."

Referring to claim 2, the system and method of Yamane as discussed above with regard to claim 1 discloses the invention as claimed. Again, see Figures 1, 3 & 13 and the corresponding portions of Yamane's specification for this disclosure. In particular, Yamane teaches "a display system comprising:

a cursor control device (CCD) [Input Device 27] configured to accept input from a user;

a display computer [10] coupled to said CCD and configured to process avionics data [GPS positioning data] and said input from said user, wherein said display computer is further coupled to a display [Display Unit 15] having a display coordinate system [See above] and at least one database [Map Database 28] including navigational data...[See above];

said display computer further configured to..." perform the method of claim 1 above, as claimed.

Referring to claim 4, the system and method of Yamane as discussed above with regard to claim 1 discloses the invention as claimed. See Figures 1 & 13 and the

corresponding portions of Yamane's specification for this disclosure. Yamane teaches the method of claim 1, as above, "further comprising the step of simultaneously displaying [See Figure 13] at least two profiles [Radar Image Data and Map Image Data]" as claimed.

Claim Rejections - 35 USC § 103

5. Claims 1-3, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endo et al (U.S. 6,453,235).

Referring to claim 1, Endo discloses a system and method for vehicle navigation as claimed. See Figures 1, 4 & 11-12 and the corresponding portions of Endo's specification for this disclosure. In particular, Endo teaches "a method for displaying navigational data associated with a vehicle on a display [3] having a display coordinate system [2-dimensional (X, Y) pixel space], said method comprising the steps of:

providing one or more databases ['map data base' on CD-ROM 4 (See column 8, lines 27-43)], each database including navigational data [map data] stored as geospatially organized data structures that include data representative of latitude and longitude coordinates [See Fig. 2 & corresponding portion of specification];

retrieving data from one or more of said databases [See Reference Elements 12 & 13];

projecting and culling [12 & 13] the retrieved data to a current display range [See column 9, lines 41-55];

updating, in real-time [See Background of the Invention Section and Fig. 11], a projected display database [VRAM 14] that substantially maintains correct projections of the projected and culled data from latitude and longitude coordinates to Cartesian coordinates [X, Y pixel coordinates (See e.g. Column 12, lines 51-63)];

modifying [Image Synthesis (26) of 23-25 & 27] said display database in accordance with location data [position & heading] associated with said vehicle [See columns 10-12]; and

displaying [on Display Unit 3] said display database in accordance with said modifying step [See column 10, lines 22-40].

The examiner allows that Endo does not explicitly disclose the vehicle as an aircraft as claimed. However, Endo's vehicle could be any vehicle navigating relative to a road network. The examiner takes Official notice that hovercraft and helicopters were vehicles (aircraft) of common knowledge in the art at the time the invention was made, and furthermore that it was common practice to navigate these low-flying aircraft relative to a road network (i.e. police helicopter chase of a car, traffic helicopters, normal usage of hovercraft).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to install Endo's vehicle navigation apparatus in a hovercraft or a helicopter to obtain the invention as claimed. One would have been motivated to do so in order to provide these low-flying aircraft with navigation ability relative to road networks.

Referring to claim 2, the system and method of Endo as discussed above with regard to claim 1 discloses the invention as claimed. Again, see Figures 1, 4 & 11-12 and the corresponding portions of Endo's specification for this disclosure. In particular, Endo teaches "a display system comprising:

a cursor control device (CCD) [Remote Controller 2] configured to accept input from a user;

a display computer [Navigation Controller 1] coupled [wireless] to said CCD and configured to process avionics data [GPS positioning data (position and heading)] and said input from said user, where said display computer is further coupled to a display [Display Unit 3] having a display coordinate system [See above] and at least one database [CD-ROM 4] including navigational data...[See above];

said display computer further configured to..." perform the method of claim 1 above, as claimed.

Referring to claim 3, the system and method of Endo as discussed above with regard to claim 1 discloses the invention as claimed. See Figure 4 and the corresponding portion of Endo's specification for this disclosure. Endo discloses the method of claim 1, as above, "further comprising the step of unifying [Image Synthesis 26] map [Map Picture from VRAM 14] and plan [Guide Route Drawing from 23] mode presentations into a virtual map" as claimed.

Referring to claim 8, the system and method of Endo as discussed above with regard to claim 2 discloses the invention as claimed. See Figure 3 and the corresponding portion of Endo's specification for this disclosure. Endo's CCD [Remote

Controller] is a graphical user interface as claimed. See column 9, lines 14-29 for the details of this disclosure.

Referring to claim 9, the system and method of Endo as discussed above with regard to claim 2 discloses the invention as claimed. See Figures 13-16 and the corresponding portions of Endo's specification for this disclosure. Endo's display "is configured to display flight plan transitions [turns] as curved paths [See Figures 14A, 14D, 16A & 16D] from one flight leg [road] to the next" as claimed.

6. Claims 1, 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamane et al (U.S. 6,212,132).

Referring to claim 1, Yamane discloses a system and method for displaying navigational information associated with a vehicle as claimed. See Figures 1, 3 & 13 and the corresponding portions of Yamane's specification for this disclosure. In particular, Yamane teaches a method for displaying navigational data associated with a vehicle on a display [15] having a display coordinate system [2-dimensional (X, Y) pixel space], said method comprising the steps of:

providing one or more databases [Map Database 28], each database including navigational data stored as geospatially organized data structures that include data representative of latitude and longitude coordinates [See column 9, lines 46-51];

retrieving data from one or more of said databases [See Reference Elements 28, 30 & 34];

projecting and culling [Polygon Processing 30 (S1)] the retrieved data to a current display range;

updating, in real-time, a projected display database [Polygon Buffer 34] that substantially maintains correct projections of the projected and culled data from latitude and longitude coordinates to Cartesian coordinates [X, Y pixel coordinates (See Step S1)];

modifying said display database [Geometric Conversion 40 (S2) and Rendering 42 (S3)] in accordance with positioning data [Parameters 38 and GPS Positioning 45] associated with said vehicle; and

displaying [on Display Unit 15] said display database in accordance with said modifying step.

The examiner allows that Yamane does not explicitly disclose the vehicle as an aircraft as claimed. Yamane's navigation system is specifically applied to a 'ship' as disclosed. However, Yamane's 'ship' could potentially be any vehicle using radar to navigate relative to terrain and other surrounding objects. The examiner takes Official notice that it was common practice in the art at the time the invention was made to use radar display, such as that of Yamane, in the navigation of an aircraft.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to install Yamane's radar display apparatus (of Figure 1) in an aircraft to obtain the invention as claimed. One would have been motivated to do so in order to provide the aircraft's pilots with a comprehensive display of both radar and mapping information.

Referring to claim 2, the system and method of Yamane as discussed above with regard to claim 1 discloses the invention as claimed. Again, see Figures 1, 3 & 13 and the corresponding portions of Yamane's specification for this disclosure. In particular, Yamane teaches "a display system comprising:

a cursor control device (CCD) [Input Device 27] configured to accept input from a user;

a display computer [10] coupled to said CCD and configured to process avionics data [GPS positioning data] and said input from said user, wherein said display computer is further coupled to a display [Display Unit 15] having a display coordinate system [See above] and at least one database [Map Database 28] including navigational data...[See above];

said display computer further configured to..." perform the method of claim 1 above, as claimed.

Referring to claim 4, the system and method of Yamane as discussed above with regard to claim 1 discloses the invention as claimed. See Figures 1 & 13 and the corresponding portions of Yamane's specification for this disclosure. Yamane teaches the method of claim 1, as above, "further comprising the step of simultaneously displaying [See Figure 13] at least two profiles [Radar Image Data and Map Image Data]" as claimed.

7. Claims 1 and 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,920,276 to Frederick in view of U.S. Patent No. 6,199,008 to Aratow et al.

Referring to claim 1, Frederick discloses a system and method for the display of navigational information associated with an aircraft as claimed. See Figures 1-3 & 6 and the corresponding portions of Frederick's specification for this disclosure. In particular, Frederick teaches a method for displaying navigational data associated with an aircraft on a display [56] having a display coordinate system [2-dimensional (X, Y) pixel space], said method comprising the steps of:

providing one or more databases [Nav Database 93 & Terrain Database 94], each database including navigational data stored as geospatially organized data structures that include data representative of latitude and longitude coordinates [See column 7, lines 60-67];

retrieving data from one or more of said databases [See column 7, lines 56-67];

projecting ['converts the data to x, y coordinates for display' (Column 8, lines 35-50)] and culling ['retrieves such latitude and longitude addresses from' (Column 8, lines 35-50)] the retrieved data to a current display range ['within a selected distance from the aircraft' (Column 8, lines 35-50)];

updating a projected display database [Display RAM 95] that substantially maintains correct projections of the projected and culled data from latitude and longitude coordinates to Cartesian coordinates [See column 8, lines 48-53];

modifying said display database [updates the data in Display RAM 95 and/or Display RAM 52 at the completion of the next sweep cycle (See column 5, lines 1-65 and column 7, line 17 et seq.)] in accordance with avionics data ['heading information, aircraft position information, and track information' (Column 7, lines 27-67)] associated with said aircraft; and

displaying said display database ['the data from the display RAM 52...and the display RAM 95...produce on the cathode ray tube 56 a plan view image' (Column 8, lines 54-58)] in accordance with said modifying step.

Frederick does not explicitly state that the projecting, culling and updating occurs "in real time" as claimed.

Aratow discloses an aircraft navigation system and method similar to that of Frederick. See Figures 1-5 and the corresponding portions of Aratow's specification for this disclosure. In particular, Aratow teaches the importance of real-time calculation and display of navigational information "to allow increased situational awareness of the pilot and enhance display of possible dangerous conditions and prohibited procedures." (Column 1, lines 10-23)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frederick's calculations to be performed in real time as disclosed by Aratow. One would have been motivated to do so because of Aratow's disclosed need as provided above.

Referring to claim 3, the method of Frederick in view of Aratow as applied to claim 1 above discloses the invention as claimed. See Figures 1-3 and the

corresponding portions of Frederick's specification for this disclosure. Frederick v. Aratow teaches the method of claim 1, as above, "further comprising the step of unifying map [terrain data] and plan mode [plan view] presentations into a virtual map [See Figures 2 & 3]" as claimed.

Referring to claim 4, the method of Frederick in view of Aratow as applied to claim 1 above discloses the invention as claimed. See Figures 2 & 3 and the corresponding portions of Frederick's specification for this disclosure. Frederick v. Aratow teaches the method of claim 1, as above, "further comprising the step of simultaneously displaying at least two profiles [Fig. 2: front view 104 & plan view 108. Fig. 3: front view 204, left side view 222, right side view 221 & plan view 212]" as claimed.

Referring to claim 5, the method of Frederick in view of Aratow as applied to claim 1 above discloses the method as claimed. See Figures 1-3 & 6 and the corresponding portions of Frederick's specification for this disclosure. Frederick v. Aratow teaches the method of claim 1, as above, "further comprising the step of displaying a map from a variable perspective [See Figures 2 & 3 and the discussion regarding claim 4 above], wherein the angle of incidence between a pilot's view and earth's surface is set at an angle of less than ninety degrees [See Figure 6]" as claimed.

8. Claims 2 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frederick (U.S. 5,920,276) in view of Aratow (U.S. 6,199,008) as applied to claim 1 above, and further in view of U.S. Patent No. 5,978,715 to Briffe et al.

Referring to claim 2, Frederick in view of Aratow discloses a system and method for the display of navigational information associated with an aircraft as claimed. See the discussion regarding claim 1 above for the details of this disclosure. In particular, Frederick (as modified by Aratow) teaches a display system comprising:

a plurality of control knobs [170, 174, 178, 180, etc. (See Figure 2)] configured to accept input from a user;

a display computer [Figure 1] coupled to said plurality of control knobs and configured to process avionics data and said input from said user, wherein said display computer is further coupled to a display [CRT 56] having a display coordinate system [See above] and at least one database [Nav Database 93 and Terrain Database 94] including navigational data...[See above];

said display computer further configured to: ... [perform the method of claim 1].

Frederick does not expressly disclose "a cursor control device (CCD) configured to accept input from a user" as claimed. However, Frederick does disclose the plurality of control knobs, as described above, configured to accept input from a user. This provides suggestion for using any commonly used input device for the pilot to control the display computer.

Briffe discloses a system and method similar to those of Frederick and Aratow. See Figures 1, 2 and 5 and the corresponding portions of the specification for this disclosure. Refer specifically to column 10, lines 34-43 for Briffe's disclosure of a track-ball (44) or "other cursor control devices, such as a touch panel" for processing user input to control the display computer.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add Briffe's track-ball, or any other commonly used cursor control device, to Frederick's (as modified by Aratow) display computer system as a means of input to the system from the pilot. One would have been motivated to do so because this means of input would provide a more convenient input interface to the pilot than the plurality of knobs by consolidating the plurality of knobs into one, easy to manipulate input device.

Referring to claim 6, the system and method of Frederick in view of Aratow and Briffe as applied to claim 2 above discloses the invention as claimed. See Figures 2 & 3 and the corresponding portions of Frederick's specification for this disclosure. Frederick's (as modified by Aratow and Briffe) display computer is configured to display a map from a variable [changeable by pilot input] perspective [Fig. 2: front view 104 & plan view 108. Fig. 3: front view 204, left side view 222, right side view 221 & plan view 212] as claimed.

Referring to claim 7, the system and method of Frederick in view of Aratow and Briffe as applied to claim 2 above discloses the invention as claimed. See Figures 2 & 3 and the corresponding portion of Frederick's specification for this disclosure. Frederick v. Aratow & Briffe teaches the system of claim 2, as above, "further comprising a map of layered information [terrain data and radar data], wherein said layers are controllable via graphical interfaces [See Figure 2]" as claimed.

Referring to claim 8, the system and method of Frederick in view of Aratow and Briffe as applied to claim 2 above discloses the invention as claimed. See column 10,

lines 34-43 of Briffe's specification for this disclosure. Briffe's cursor control device, as added to Frederick's (as modified by Aratow) display computer in claim 2, is a graphical user interface [track-ball or touch panel] as claimed.

Referring to claim 9, the system and method of Frederick in view of Aratow and Briffe as applied to claim 2 above discloses the invention as claimed. See Figures 5, 9 & 14 and the corresponding portions of Briffe's specification for this disclosure. Frederick v. Aratow does not explicitly disclose the display of flight plan transitions as curved paths from one flight leg to the next. However, Briffe does provide this disclosure in the bottom half of Figure 5, as well as Figures 9 & 14 and the corresponding portions of the specification. Therefore, in combining the teachings of Frederick, Aratow and Briffe as above, it would have been obvious to one of ordinary skill in the art at the time the invention was made to configure Frederick's (as modified by Aratow and Briffe) display computer to include Briffe's functionality of displaying flight plan transitions as curved paths from one flight leg to the next. One would have been motivated to do so in order to provide the pilot with a clear view of the plane's intended path over the displayed map terrain.

Response to Arguments

9. Applicant's arguments with respect to claims 1 and 2 have been considered but are moot in view of the new ground(s) of rejection.

Referring to applicants' remarks on pages 4-6 regarding the Sections 102 and 103 rejections of the independent claims over Endo: Applicants argued that Endo does

not disclose or suggest maintaining correct projections of the projected and culled data from latitude and longitude coordinates to Cartesian coordinates as recited in independent claims 1 and 2.

The examiner disagrees for the following reasons: Endo's VRAM (14) is a 2-dimensional, rectangular (X,Y) Cartesian display RAM, while the map data is stored in latitude and longitude coordinates which are spherical in nature. As per the projection step, the latitude and longitude coordinates must inherently be converted/projected into the 2-dimensional (X,Y) Cartesian coordinates for display on the (flat) display unit. In other words, because the pixel grid structure of Endo's display [See the Background of the Invention section, as well as Figures 4 & 11] is Cartesian, the spherical latitude and longitude coordinates of map data must be converted to Cartesian coordinates for display. There can be no other way in which to produce spherical coordinates on a flat, 2-dimensional display. This is evidenced in conjunction with Figure 11 and the corresponding portion of Endo's specification. Therefore, Endo does maintain correct projections of the projected and culled data from latitude and longitude coordinates to Cartesian coordinates as recited in the independent claims.

Referring to applicants' remarks on pages 5-6 regarding the Sections 102 and 103 rejections of the independent claims over Yamane: Applicants argued that Yamane does not disclose or suggest maintaining correct projections of the projected and culled data from latitude and longitude coordinates to Cartesian coordinates as recited in independent claims 1 and 2.

The examiner disagrees for substantially the same reasons as those set forth above in regards to the same argument against Endo. See column 8, line 14 – column 9, line 51 of Yamane's specification for the disclosure of the projection/conversion of the latitude/longitude map data into the 2-dimensional pixel grid for display.

Referring to applicants' remarks on page 6 regarding the Section 103 rejections of the independent claims over Frederick in view of Aratow and Briffe: Applicants argued that Frederick does not disclose or suggest maintaining correct projections of the projected and culled data from latitude and longitude coordinates to Cartesian coordinates as recited in independent claims 1 and 2. Applicant further argues that Aratow and Briffe fail to make up for this shortcoming in Frederick.

The examiner disagrees for substantially the same reasons as those set forth above in regards to the same argument against Endo. Furthermore, Frederick explicitly states that the Display RAM maintains correct projections of the projected and culled data from latitude and longitude coordinates to Cartesian coordinates as claimed. See column 7, line 56 – column 8, line 53 of Frederick's specification for this disclosure.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 5,798,923 to Laskowski is considered particularly pertinent to portions of applicants' claimed invention, while U.S. Patent No. 4,876,651 to Dawson et

al. is considered pertinent to applicants' disclosure, and/or portions of applicants' claimed invention.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Goddard whose telephone number is 703-305-7821. The examiner can normally be reached on M-F, 9 AM - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 703-308-1436. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

bdg
24 March 2004

SAFET METJAHIC
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100